

This chapter contains information for testing Mitsubishi vehicles with the Asian Import Vehicle Communication Software (VCS). The following Mitsubishi systems may be available for testing:

- Engine
- Transmission
- Antilock Brake System (ABS)
- Airbag (SRS)

13.1 Testing Engine, Transmission, ABS, and SRS Systems

Mitsubishi engine, transmission, and SRS (airbag) testing includes:

- “Code Reading Connectors and Locations” on page 143
- “Transmission Manual Code Reading” on page 147
- “ABS Manual Code Reading” on page 147
- “Codes & Data (Slow)” on page 148
- “Clearing Codes” on page 148
- “Actuator Tests” on page 149

13.1.1 Code Reading Connectors and Locations

Refer to Figure 13-1 and Table 13-1 on page 144 for diagnostic connector locations.

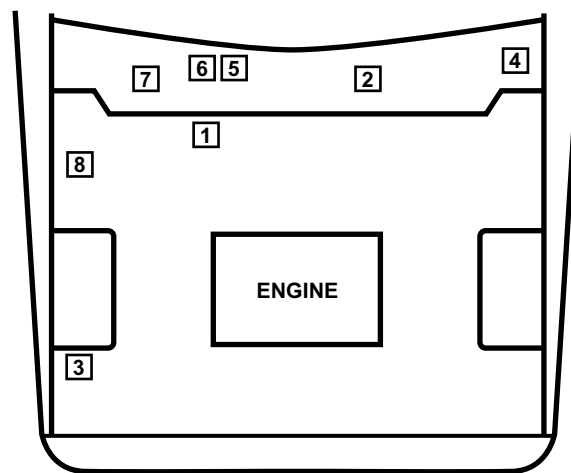


Figure 13-1 Common connector locations

Table 13-1 Common connector locations

VEHICLE	YEAR		LOCATION
3000 GT	1991–93	4	Next to fuse panel
	1994–99	2	Next to console
Cordia/Tredia	1984–88	8	Near firewall
Diamante	1992–96	4	Next to fuse panel
	1997–04	2	Next to console
Eclipse	1990–94	4	Next to fuse panel
	1995–05	2	Next to console
Endeavor	2004–05	2	Next to console
Expo/LRV	1992–96	4	Next to fuse panel
Galant	1985–87	6	Next to glovebox striker
	1989–93	4	Next to fuse panel
	1994–05	2	Next to console
Lancer	2002–05	2	Next to console
Lancer Sport Back	2004	2	Next to console
Mirage	1989–96	4	Next to fuse panel
	1997–2002	2	Next to console
Mirage Turbo	1985–88	1	Near firewall
Montero	1989	7	Behind glovebox
	1990–91	5	Next to ECM
	1992–2000	4	Near hood release
	2001–05	2	Next to console
Montero Sport	1997–2004	4	Near hood release
Outlander	2003–05	2	Next to console
Precis	1990–94	4	In fusebox
Sigma	1988–90	6	Next to glovebox striker
Starion	1984–86	3	In engine compartment
	1987–89	6	Next to glovebox striker
Truck	1990–96	4	Next to fuse panel
Van/Wagon	1987–90	4	Next to fuse panel

**To read codes from most 1987 and earlier vehicles:**

- Use Figure 13-2 and Table 13-2 on page 145 to locate and connect to the diagnostic connector for most 1987 and earlier models.

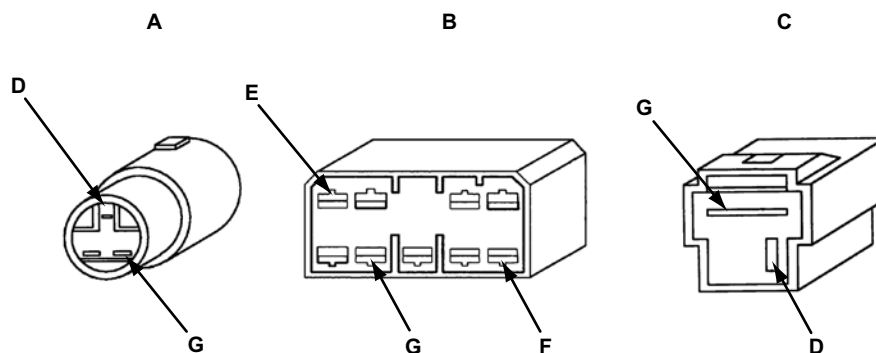


Figure 13-2 Diagnostic connectors for most 1987 and earlier vehicles

- A—3-pin connector
- B—9-pin connector
- C—2-pin connector
- D—Green (preferable) or Yellow
- E—Engine: Green (preferable) or Yellow
- F—Transmission: Green or Yellow
- G—Black

Table 13-2 Mitsubishi diagnostic connector locations for most 1987 and earlier vehicles

CONNECTOR	INSTRUCTIONS
3-PIN	Right front fender, near head lamp. Use MULTI-1 adapter and connect colored leads as shown.
9-PIN	In glovebox, next to latch. Use MULTI-1 adapter and connect colored leads as shown, using black terminal converters.
2-PIN	Use MULTI-1 adapter and connect colored leads as shown, using white terminal converters.



To read engine and transmission codes from most 1988 and later OBD-I vehicles:

- Use the HYUN-2 adapter (Figure 13-3).

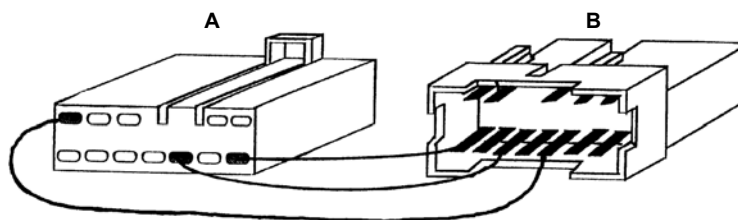


Figure 13-3 Connector and adapter for SRS system on most 1994 and earlier vehicles

- A—HYUN-2 adapter
- B—Connector



To read codes from OBD-II vehicles with 12 and 16-pin connectors:

- Use the MITSU-1 adapter with the OBD-II adapter attached (Figure 13-4 on page 146).

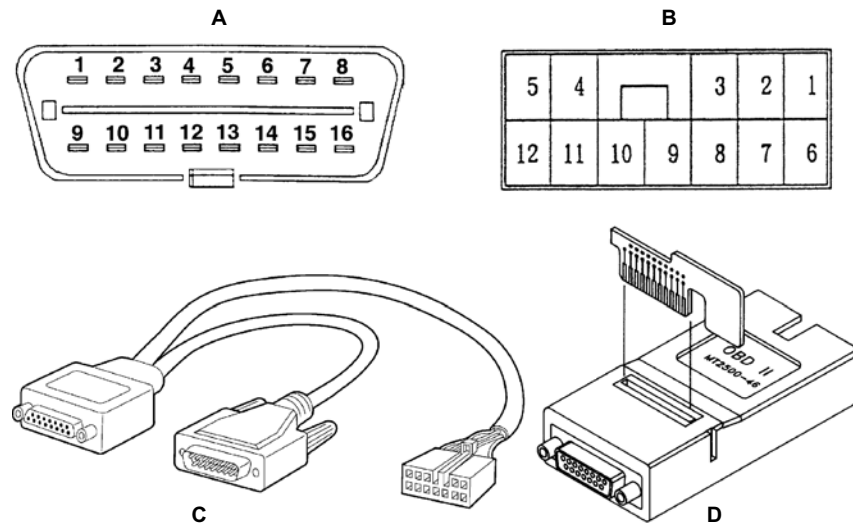


Figure 13-4 connectors and adapters for most OBD-II vehicles

A—16 pin connector

B—12-pin connector

C—Mitsu-1 adapter

D—OBD-II adapter



NOTE:

Most OBD-II vehicles have 16-pin and 12-pin connectors and use the MITSU-1 adapter connected through the OBD-II adapter. The MITSU-1 lead with the 12-pin connector is not connected on all vehicles. Follow instructions on the scan tool for correct hookup.



To read SRS codes from most 1994 and earlier vehicles:

- Use the HYUN-2 adapter and red terminal converters (Figure 13-5)

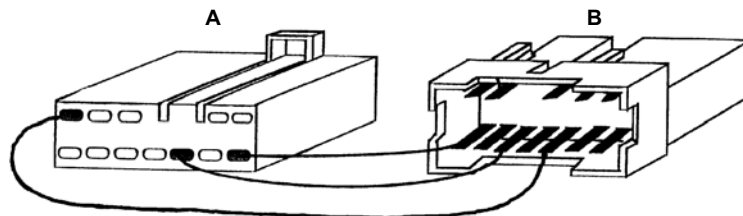


Figure 13-5 Connector and adapter for most 1994 and earlier SRS

A—HYUN-2 adapter

B—12-pin connector

13.1.2 Transmission Manual Code Reading

Mitsubishi models transmit Type 11 manual transmission codes, see Figure 13-6 and Table 13-3 on page 147.

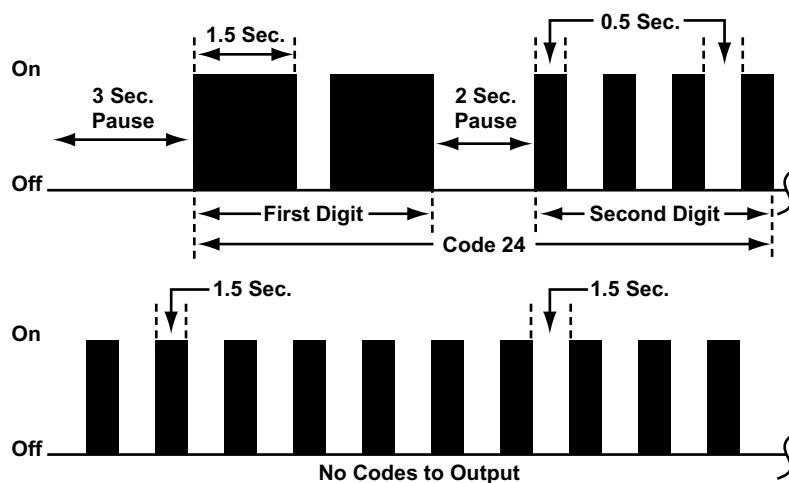


Figure 13-6 Mitsubishi transmission Code Type 11

Table 13-3 Mitsubishi transmission Code Type 11

Pattern:	For code output: long and short For no code output: repeating straight count
Read codes on:	A/T oil temp lamp or neutral indicator lamp
Start codes by:	16-pin OBD-II data link connector (Figure 13-14 on page 150): jump pin 1 to ground.
When done:	Remove the jumper wire and clear codes.
Code display cycle repeats as long as system is in a diagnostic state.	

13.1.3 ABS Manual Code Reading

Mitsubishi models transmit Type 11 ABS codes, see Figure 13-7 below and Table 13-4 on page 148.

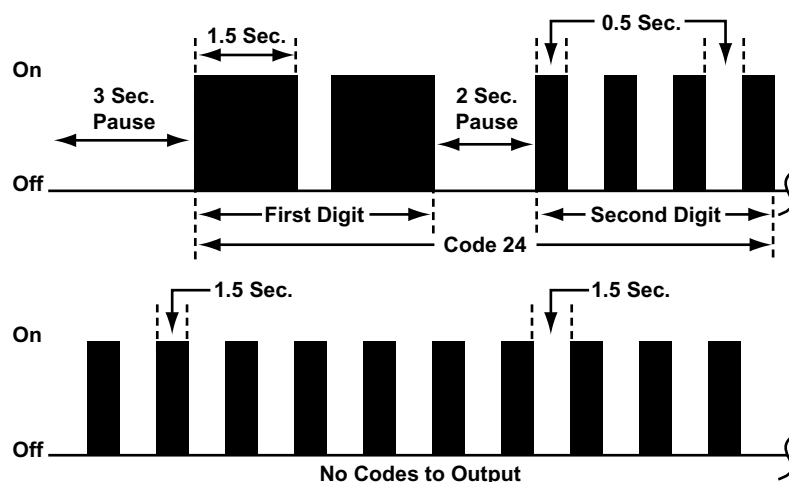


Figure 13-7 Mitsubishi ABS Code Type 11

Table 13-4 Mitsubishi ABS Code Type 11

Pattern:	For code output: long and short For no code output: repeating straight count
Read codes on:	ABS warning lamp
Start codes by:	16-pin OBD-II DLC (Figure 13-14 on page 150): jump pin 1 to ground; or connect an analog meter across pins 4 or 5 to pin 8. 12-pin diagnostic connector (Figure 13-14 on page 150): connect an analog meter across pins 4 and 12.
When done:	Remove the jumper wire and clear codes.
Code display cycle repeats as long as system is in a diagnostic state. A battery surge that causes the ABS system to fail may cause Code 16 to set.	

13.1.4 Codes & Data (Slow)

Some 1988 and later models with the 3.0L SOHC V6 engine transmit data at a 63 baud rate. The MAIN MENU for these vehicles displays CODES & DATA(SLOW) (Figure 13-8).

```

MAIN MENU - - ENGINE
>CODES & DATA(SLOW)
CUSTOM SETUP
  
```

Figure 13-8 Sample MAIN MENU with CODES & DATA(SLOW)

13.1.5 Clearing Codes

Most 1988 and later Mitsubishi models let you clear trouble codes from PCM memory through the scan tool. Select CLEAR ECM CODES from the Exit menu (Figure 13-9).

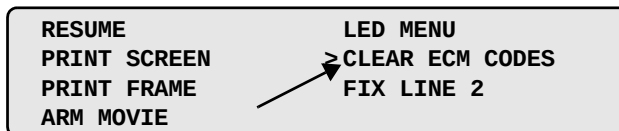


Figure 13-9 CLEAR ECM CODES selection

When codes are cleared, the scan tool returns to the previous test mode, and NO CODES PRESENT displays to indicate that codes are cleared.

If code clearing fails for any reason, the previous codes reappear at the top of the data list. If this happens, repeat the code clearing procedure.

13.1.6 Actuator Tests

Most pre-OBD-II and all 2002–03 OBD-II models have the ACTUATOR TESTS selection on the MAIN MENU (Figure 13-10). All actuator tests, except injector and timing tests (see “Injector Tests (Engine Running Only)” on page 150,) are key-on, engine-off (KOEO) tests.

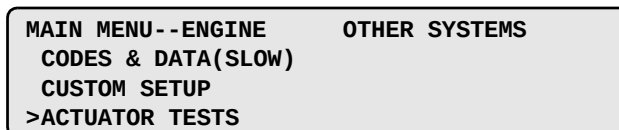


Figure 13-10 Sample MAIN MENU with ACTUATOR TESTS

A list of available tests displays when ACTUATOR TESTS is selected from the menu (Figure 13-11). The available tests vary by year and model.

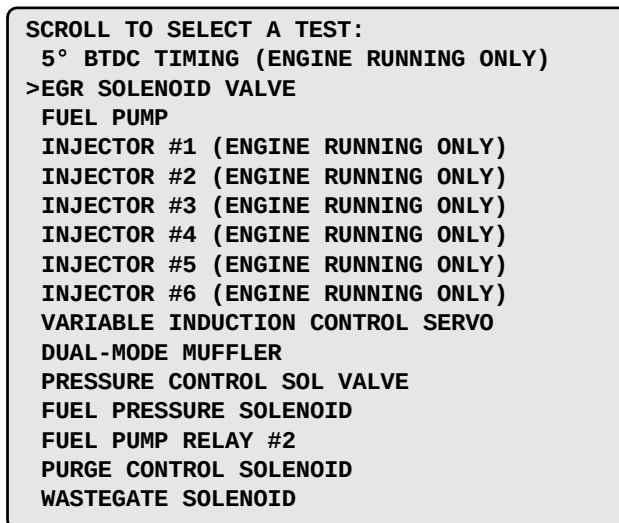


Figure 13-11 Complete list of Chrysler Imports actuator tests

During testing, monitor the selected actuator with a multimeter or by listening for actuator activation. A completed test does not mean that the actuator was activated. The scan tool only monitors the engine control module (ECM) commands to the actuator.

When you select an actuator test, the scan tool commands the ECM to activate the selected actuator (Figure 13-12).

**ACTIVATING EGR SOLENOID VALVE
FOR 5 SECONDS.**

Figure 13-12 Sample actuator test initiated

Approximately 5 seconds later, the ECM deactivates the actuator (Figure 13-13).

**EGR SOLENOID VALVE
TEST HAS BEEN COMPLETED.
PRESS Y TO REPEAT TEST.
PRESS N FOR ACTUATOR TEST MENU.**

Figure 13-13 Sample actuator test complete

All actuator tests except for injector tests must be performed with the key on and engine off (KOEO). Select a KOEO test with the engine running and a screen like Figure 13-14 displays.

**EGR SOLENOID VALVE
TEST HAS BEEN REJECTED.
PRESS Y TO REPEAT TEST.
PRESS NO FOR ACTUATOR TEST MENU.**

Figure 13-14 Sample key-on, engine-off (KOEO) test

Injector Tests (Engine Running Only)

Injector tests are available from the actuator test menu on most pre-OBD-II vehicles. These tests are performed with the key on and engine running (KOER). The number of injector tests available varies, a 4-cylinder MPI system has four tests; a six cylinder system has six.

When you select an injector test, the scan tool commands the ECM to disable the selected injector (Figure 13-15).

**DISABLING INJECTOR #1
FOR 5 SECONDS.**

Figure 13-15 Sample injector test initiated

About 5 seconds later, the ECM stops the test and re-enables the injector (Figure 13-16).

**INJECTOR #1 (ENGINE RUNNING ONLY)
TEST HAS BEEN COMPLETED.
PRESS Y TO REPEAT TEST.
PRESS N FOR ACTUATOR TEST MENU.**

Figure 13-16 Sample injector test completed